FCC Statement

The FCC (Federal Communications Commission) restricts the amount of radio frequency emission and radiation coming from computer equipment.

The equipment introduced in this manual has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user is required to correct the interference at his/her own expense.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

Trademarks

Product names mentioned in this manual may be trademarks or registered trademarks of those products.

All trademarks or brand names mentioned are properties of their respective companies.

Preface

This manual describes how to install and use the 16-Port Web-Smart Ethernet Switch. The TX ports of the switch introduced here auto-negotiates the presence of 10/100Mbps and full/half-duplex mode and auto-MDIX. In addition, it allows an optional 100Base-FX multi-mode/single-mode or 100Base-BX WDM single-mode fiber module, enabling long distance connection.

To get the most out of this manual, you should have an understanding of networking concepts such as bridging, IEEE 802.3 10Base-T Ethernet, IEEE 802.3u 100Base-TX/FX Fast Ethernet, and local area networks (LANs).

For more information about these topics, please refer to the Appendices.

In this manual, you will find:

- Introduction on the Switch
- Product features
- Illustrative LEDs functions
- Installation instructions
- Specifications

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Product Overview

Front View

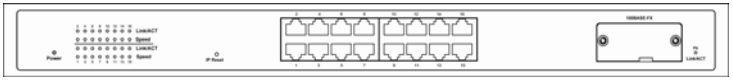


Figure 1: 16-Port Web-Smart Ethernet Switch

Package Contents

When you unpack the product package, you shall find these items listed below.

- ✓ *The 16-Port Switch*
- ✓ *One AC power cord*
- ✓ *User's Manual*

Please inspect the contents, and report any apparent damage or missing items immediately to your authorized reseller.

Product Features

- PROVIDES 16 × 10/100MBPS PORTS USING RJ-45 CONNECTORS
- AN OPTIONAL SINGLE-PORT FIBER MODULE ALLOWS:
  - *100BASE-FX MULTI-MODE FIBER WITH SC, ST, MT-RJ, VF-45 OR LC CONNECTOR*
  - *100BASE-FX SINGLE-MODE FIBER WITH SC OR ST CONNECTOR*
  - *100BASE-BX WDM SINGLE-MODE FIBER WITH SC CONNECTOR*
- AUTO-NEGOTIATION FOR SPEED AND DUPLEX MODE ON TX PORTS
- AUTO-MDIX FOR ALL TX PORTS
- 4096 MAC ADDRESSES, 1.5M BITS BUFFER MEMORY
- STORE-AND-FORWARD MECHANISM
- TRUE NON-BLOCKING ARCHITECTURE
- FULL WIRE SPEED FORWARDING RATE
- BROADCAST STORM FILTERING CONTROL
- BACK-PRESSURE AND IEEE 802.3X COMPLIANT FLOW CONTROL
- SYSTEM, IP ADDRESS, PORT, VLAN, TRUNKING, QOS MODE, AND QOS PRIORITY SETTINGS THROUGH THE WEB-BASED BROWSER.
- PRESS THE FRONT PANEL IP RESET PUSH BUTTON TO RESET THE ETHERNET SWITCH BACK TO THE DEFAULT SYSTEM AND IP ADDRESS SETTINGS. (THE PORT, VLAN, TRUNKING, QOS MODE, AND QOS PRIORITY SETTINGS WILL REMAIN THE SAME AS WHEN THEY WERE LAST SAVED).
- FRONT PANEL PORT AND POWER STATUS LEDS
- STANDARD 19" RACKMOUNT SIZE, ONE-UNIT IN HEIGHT

Front Panel Display

The LED indicators on the front panel provide you with instant feedback on each port status, and help you monitor and troubleshoot the switch.

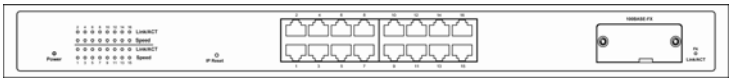


Figure 2: Front Panel LEDs

Power
This LED comes on when the switch is properly connected to power and turned on.

IP Reset Push Button
Press the Front panel IP Reset push button to reset the Ethernet Switch back with the default User Name, Password, IP Address, Netmask, and Gateway settings.

Port Status
The RJ-45 ports are numbered from 1 to 16 on the 16-Port Switch.

The LEDs are located on the front panel of the switch, displaying status for each respective port. Please refer to the table below for more information.

Consult the following table for details.

ⓘ Before you use this table for troubleshooting, make sure the switch is properly connected to power and turned on.

Physical Ports

The 16-Port Switch has sixteen 10/100Mbps ports using RJ-45 connectors and provides one slot for the optional single-port fiber module. The optional module allows fiber type (multi-mode, single-mode, or WDM single-mode fiber) and connector (SC, ST, MT-RJ, VF-45, or LC) at user's discretion.

UNDERSTANDING FRONT PANEL DESIGN

Power LED		On	Power feeding in
		Off	Power switched off
			Improper connection
Port LED	Link/ACT	On	A valid network connection
		Flashing	Transmitting or receiving data ACT stands for ACTIVITY
		Off	Neither connection nor activity
	Speed	On	A valid 100Mbps connection
		Off	A valid 10Mbps connection
100FX/BX Port LED	Link/ACT	On	A valid network connection
		Flashing	Transmitting or receiving data ACT stands for ACTIVITY
		Off	Neither connection nor activity

Installation

Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

- The ambient temperature should be between 32 and 113 degrees Fahrenheit (0 to 45 degrees Celsius).

- The relative humidity should be less than 95 percent, non-condensing.

- Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.

- Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes on each side of the switch or on the rear of the equipment.

- The power outlet should be within 6 feet (1.8 meters) of the switch.

Installation and Placement Instructions

MOUNTED TO 19-INCH STANDARD RACK

Locate the accessories supplied in the product package. Use the rackmount brackets and screws to install the switch into any EIA 19" standard rack.

Step 1: Attach the brackets to each side of the chassis.

Step 2: Apply the screws to each side and secure them tightly.

Step 3: Carefully position the switch into the rack.

Step 4: Align the brackets to the side holes on the rack and use rack screws to secure the chassis with the rack.

Step 5: Proceed to the "Connecting to Power" section.

DESKTOP OR ANY FLAT SURFACE

The switch can sit on desktop or any flat surface with adequate space and ventilation. If you want to place it onto a shelf, make sure the shelf can withstand the weight of the switch.

Step 1: Simply put the switch on the desired place.

Step 2: Ensure the switch receives good ventilation.

Step 3: Proceed to the "Connecting to Power" section.

Optional Fiber Module Installation

Consult the following illustrations before installation.

Step 1: Make sure the power is switched off. The module is not hot-swappable.

ⓘ It may cause electric shock or any possible damage to the switch if the power is not switched off.

Step 2: Remove the module from the static-free container.

Step 3: Unscrew the cover plate of the expansion slot.
(The slot for single-port module is located at the right side of the switch.)

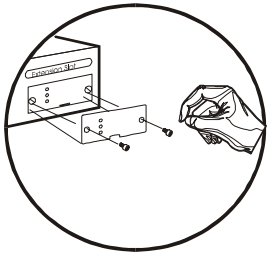
Step 4: Remove the plate.
(Keep it for future use if you decide to remove this module later.)

Step 5: Carefully slide the module into the slot, following the internal plastic guide rails.

Step 6: Once it is fully slid in, snap in the module to make a proper connection.

Step 7: Fasten the module screws.

Step 8: Finally, turn on the power.



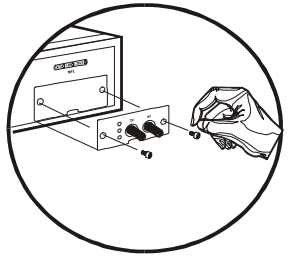


Figure 3: Removal of cover plate Fiber module being installed

Connecting to Power

Locate the supplied AC power cord.

Step 1: Connect the AC power cord to the receptacle at the back of the switch.

Step 2: Attach the plug into a standard AC outlet with a voltage range from 100~240VAC.

Step 3: The power LED on the front panel will then illuminate.

Figure 4: The back view of 16-Port Web-Smart Ethernet Switch

Connecting to Your Network

CABLING

Step 1: First, ensure the power of the switch (and end devices) is turned off.

ⓘ It may cause an electric shock or any possible harm to you if the power is not switched off.

Step 2: Prepare cable with corresponding connectors for each type of port in use.
(Consult the table below for cabling requirements based on connectors and speed considerations.)

Step 3: Connect one end of the cable to the switch and the other end to a desired device.

Step 4: Once the connections between two end devices are made successfully, turn on the power and the switch is operational.

NETWORK SEGMENTATION

The maximum segment distance between a node and a directly connected switch port on a 100Base-FX network is 100km using 10/125 (or 9/125) µm single-mode fiber optic cable. It is capable of a maximum span of 2km when 62.5/125 (or 50/125) µm multi-mode fiber optic cable is used.

Cable Specifications Table

Ethernet Standards	**Connector**	**Port Speed Half/Full Duplex**	**Cable**	**Max. Distance**
10Base-T	RJ-45	10/20 Mbps	Cat. 3, 4 or 5 UTP/STP	100m
100Base-TX	RJ-45	100/200 Mbps	Cat. 5 UTP/STP	100m
100Base-FX Multi-mode	ST, SC, MT-RJ, VF-45, LC	100/200 Mbps	50 or 62.5/125µm multi-mode fiber	Up to 2km
100Base-FX Single-mode	ST, SC	100/200 Mbps	9 or 10/125µm single-mode fiber	Up to 100km
100Base-BX WDM Single-mode	SC	100/200 Mbps	9 or 10/125µm single-mode fiber	Up to 40km

Switch Configuration

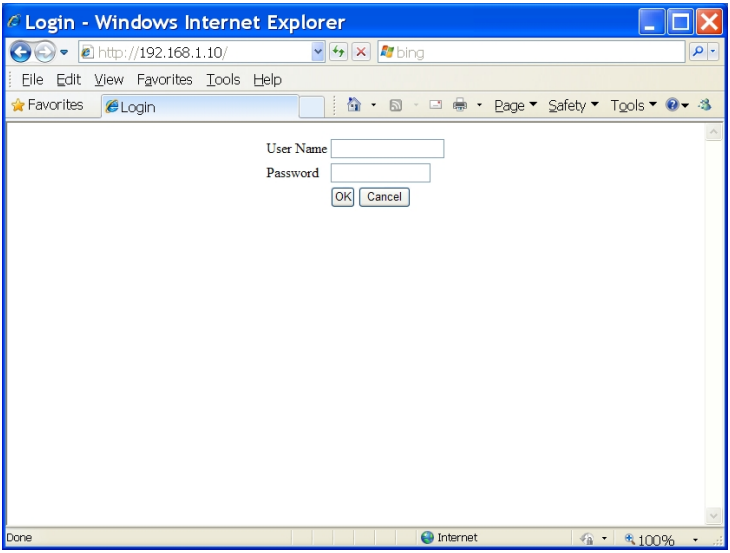
Setting up Web-Based Browser Interface

The Ethernet Switch provides a browser interface that lets you configure and manage the Ethernet Switch from a Web browser (such as Microsoft Internet Explorer or Netscape Navigator) remotely.
By connecting to any port of this Ethernet Switch, you can access the Ethernet Switch's web interface applications directly in your web browser by entering the default IP address of the Ethernet Switch (192.168.1.10). You can then use your web browser to list and manage the Ethernet Switch configuration parameters from one central location.

Logging on to The Ethernet Switch

SWITCH IP ADDRESS

In your web browser, specify the **default IP address** of the Ethernet Switch **(192.168.1.10)**.

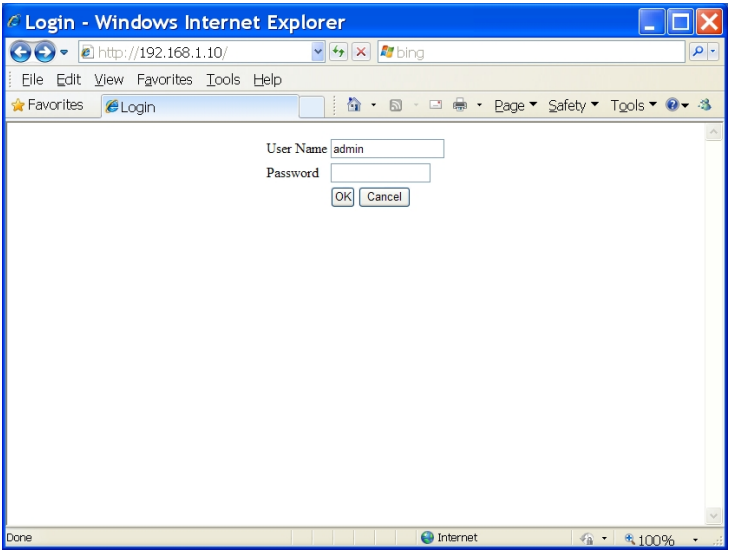


USER NAME

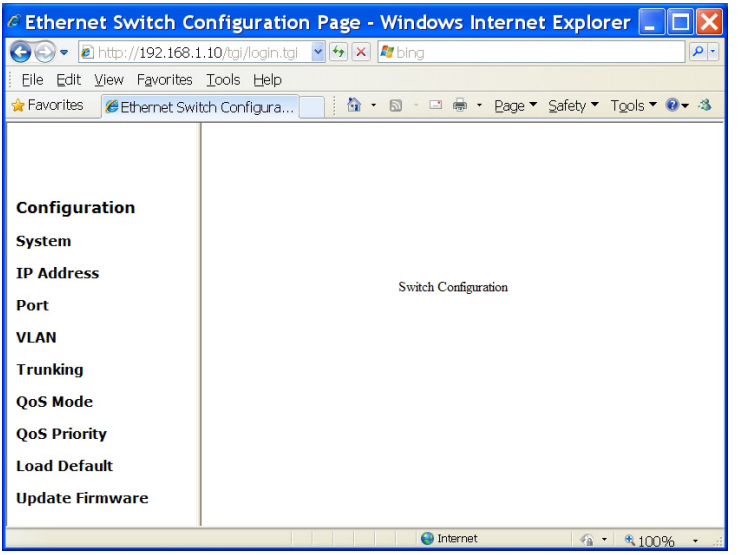
Enter the factory default User Name: **admin**.

PASSWORD

Enter the factory default password (no password, **press <Enter> directly**).
Otherwise, enter a user-defined password if you follow the instructions later and change the factory default password.

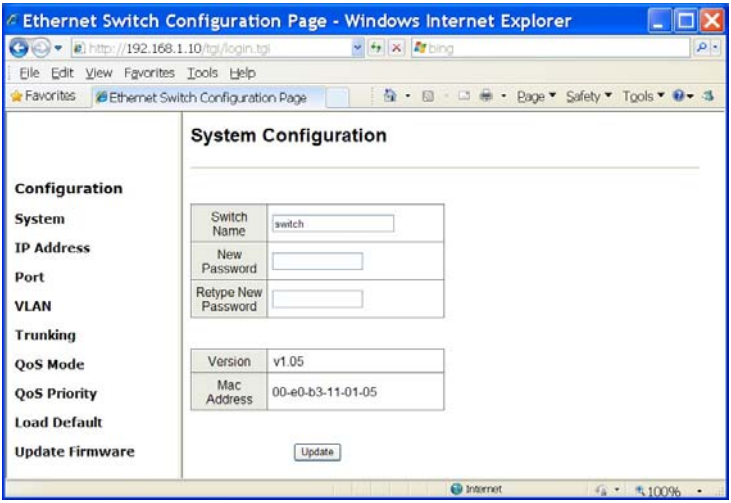

Login - Windows Internet Explorer
http://192.168.1.10/
bing
File Edit View Favorites Tools Help
Favorites
Login
Page Safety Tools
User Name admin
Password
OK Cancel
Done
Internet
100%

Main Menu



SYSTEM

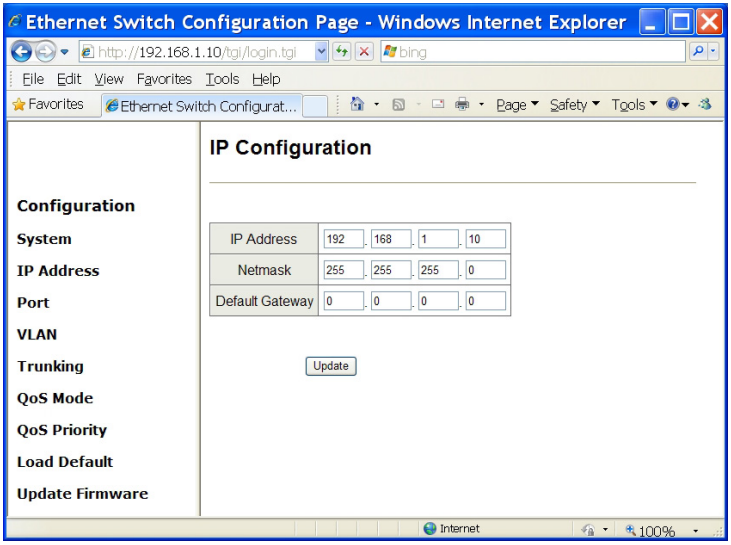
The **System** parameters can be displayed by clicking the **System** selection in the left sub-menu.



- Switch Name: Type a switch name for this Ethernet Switch.
- New Password: Enter a user-defined password and change the factory default password.
- Retype New Password: Retype the new password.
- Update: Click the **Update** button and apply the new System settings.

IP ADDRESS

The **IP Address** parameters can be displayed by clicking the **IP Address** selection in the left sub-menu.

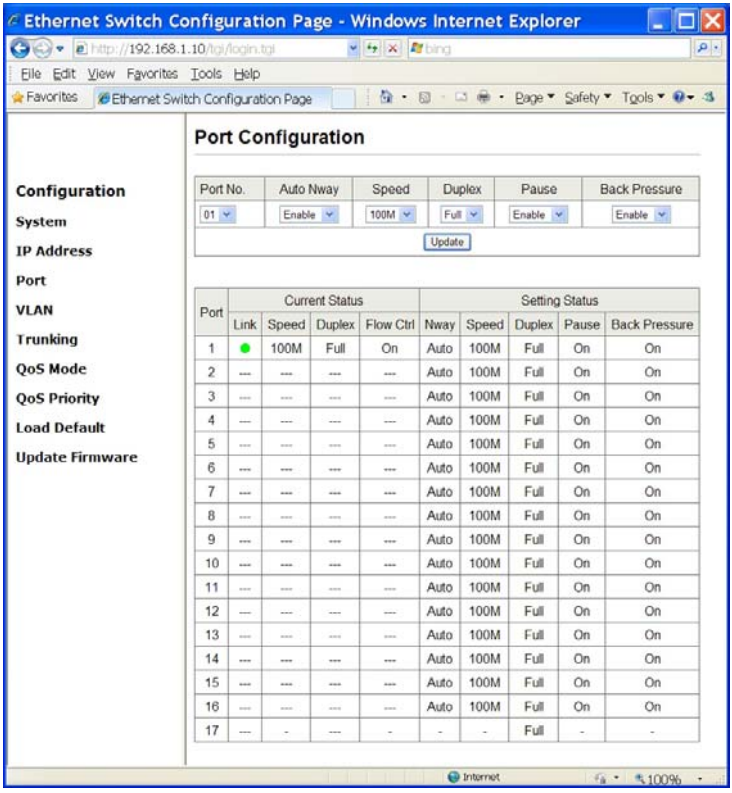


- IP Address, Netmask, Default Gateway: You can see and change the IP Address, Netmask, and Default Gateway of the Ethernet Switch.
- Update: Click the **Update** button and apply the new **IP Configurations**.

  ⓘ Please relogin the switch with the new IP Configuration after you click the update button.

PORT

The **Port** parameters can be displayed by clicking the **Port** selection in the left sub-menu.

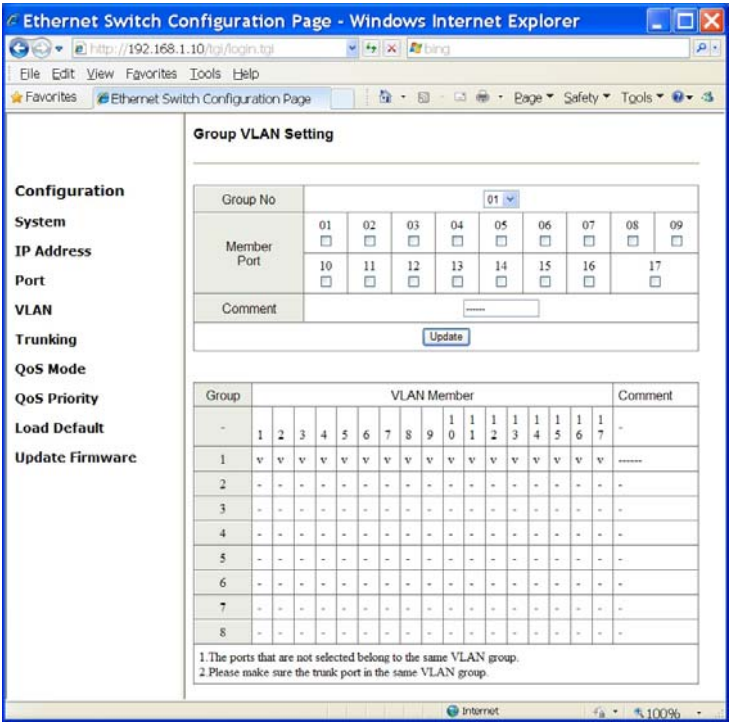

Ethernet Switch Configuration Page - Windows Internet Explorer
http://192.168.1.10/tgi/login.tgi
File Edit View Favorites Tools Help
Favorites
Ethernet Switch Configuration Page
Page Safety Tools
Configuration
System
IP Address
Port
VLAN
Trunking
QoS Mode
QoS Priority
Load Default
Update Firmware
Port Configuration
Port No. Auto Nway Speed Duplex Pause Back Pressure
01 Enable 100M Full Enable Enable
Update
Port Current Status Setting Status
Link Speed Duplex Flow Ctrl Nway Speed Duplex Pause Back Pressure
1 100M Full On Auto 100M Full On On
2 Auto 100M Full On On
3 Auto 100M Full On On
4 Auto 100M Full On On
5 Auto 100M Full On On
6 Auto 100M Full On On
7 Auto 100M Full On On
8 Auto 100M Full On On
9 Auto 100M Full On On
10 Auto 100M Full On On
11 Auto 100M Full On On
12 Auto 100M Full On On
13 Auto 100M Full On On
14 Auto 100M Full On On
15 Auto 100M Full On On
16 Auto 100M Full On On
17 Full
Internet
100%

- Port No.: Choose **Port No. 01 ~ 17**.
- Auto Nway: Choose **Enable** or **Disable** to enable or disable **Auto Nway** of the ports.
- Speed: Choose **100M** or **10M** speed for the ports.
- Duplex: Choose **Full** or **Half** Duplex for the ports.
- Pause: Choose **Enable** or **Disable** to enable or disable **Pause** for the ports.

- Backpressure: Choose **Enable** or **Disable** to enable or disable **Backpressure** for the ports.
- Update: Click the **Update** button and apply the new settings of the ports.

VLAN

The **VLAN** parameters can be displayed by clicking the **VLAN** selection in the left sub-menu.


Ethernet Switch Configuration Page - Windows Internet Explorer
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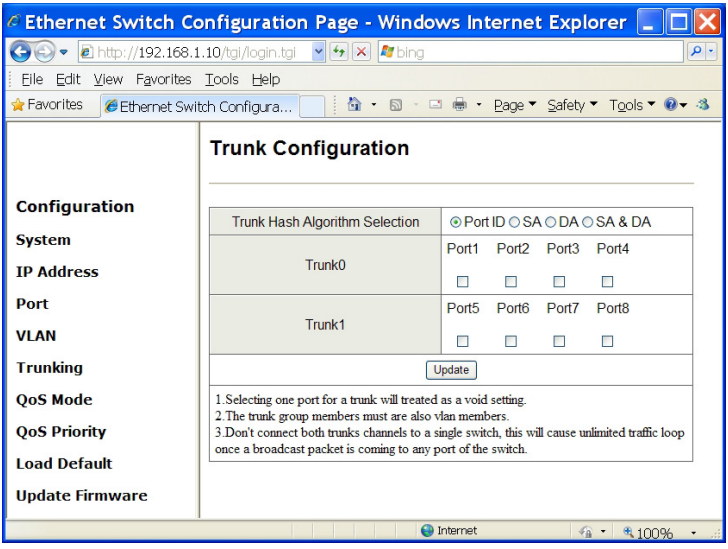
File Edit View Favorites Tools Help
Favorites
Ethernet Switch Configuration Page
Page Safety Tools
Configuration
System
IP Address
Port
VLAN
Trunking
QoS Mode
QoS Priority
Load Default
Update Firmware
Group VLAN Setting
Group No
01
Member Port
01 02 03 04 05 06 07 08 09
10 11 12 13 14 15 16 17
Comment
Update
Group
VLAN Member
Comment
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
1 v v v v v v v v v v v v v v v v v
2 - - - - - - - - - - - - - - - - -
3 - - - - - - - - - - - - - - - - -
4 - - - - - - - - - - - - - - - - -
5 - - - - - - - - - - - - - - - - -
6 - - - - - - - - - - - - - - - - -
7 - - - - - - - - - - - - - - - - -
8 - - - - - - - - - - - - - - - - -
1.The ports that are not selected belong to the same VLAN group.
2.Please make sure the trunk port in the same VLAN group.
Internet
100%

- Group No: Click and choose the VLAN **Group No 01 ~ 08**.
- Member Port: Click and choose the **Member Port 01 ~ 17** to be added into the VLAN **Group No 01 ~ 08**.
- Comment: Type Comment for VLAN **Group No 01 ~ 08**.

- Update: Click the **Update** button and apply the new settings of the VLAN groups.

TRUNKING

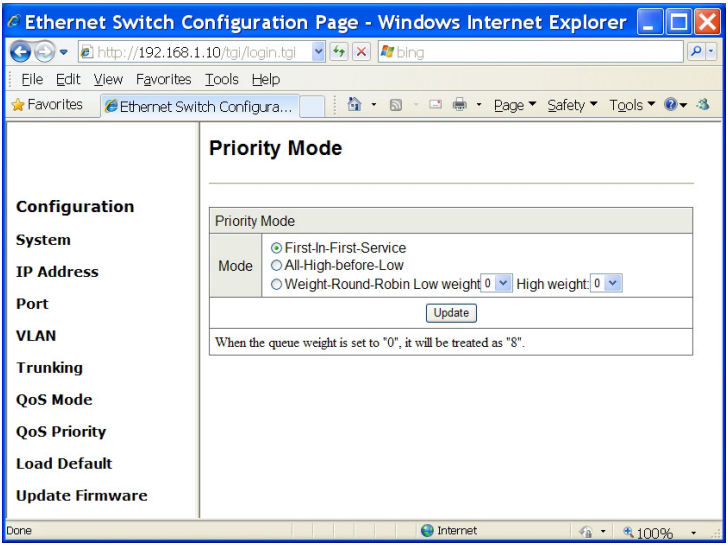
The **Trunking** parameters can be displayed by clicking the **Trunking** selection in the left sub-menu.



- Trunk Hash Algorithm Selection: Click and choose **Port ID**, **SA**, **DA**, or **SA & DA Trunk Hash Algorithm**.
- Trunk0: Click and choose **Port1 ~ Port4** to be added into the **Trunk0**.
- Trunk1: Click and choose **Port5 ~ Port8** to be added into the **Trunk1**.
- Update: Click the **Update** button and apply the new settings of the **Trunking** Groups.

QOS MODE

The **QoS Mode** parameters can be displayed by clicking the **QoS Mode** selection in the left sub-menu.

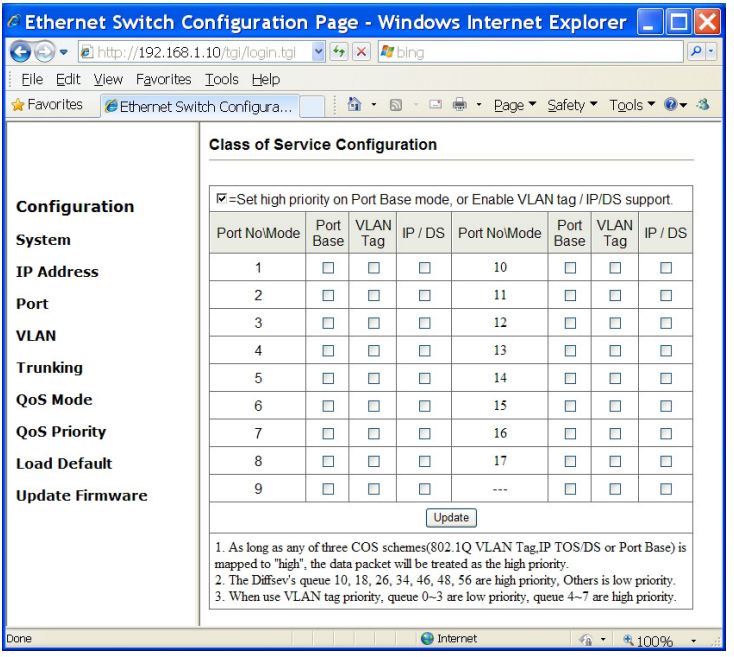


- Click and choose **First-In-First-Service, All-High-before-Low,** or **Weight-Round-Robin** Priority Mode.

  ⓘ The Priority Mode will be treated as “8” when both **Low weight** and **High weight** of **Weight-Round-Robin** are set to “0”.
- Update: Click the **Update** button and apply the new settings of the **QoS Mode**.

QoS Priority

The **QoS Priority** parameters can be displayed by clicking the **QoS Priority** selection in the left sub-menu.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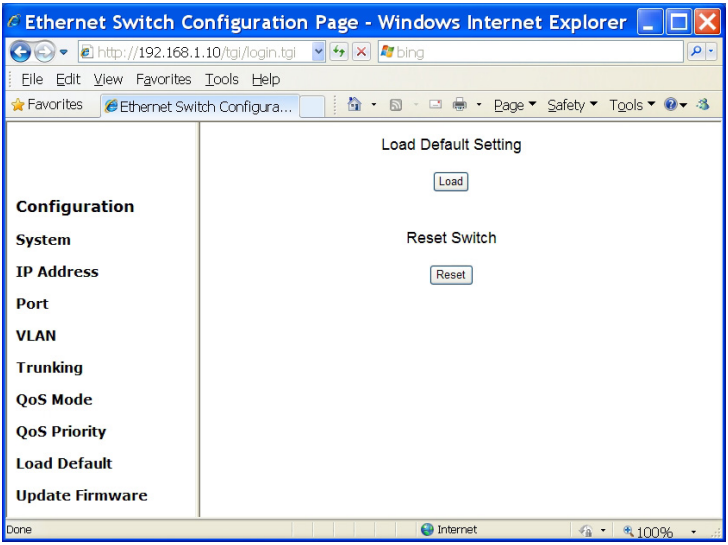
File Edit View Favorites Tools Help
Favorites
Ethernet Switch Configura...
Page Safety Tools
Configuration
System
IP Address
Port
VLAN
Trunking
QoS Mode
QoS Priority
Load Default
Update Firmware
Class of Service Configuration
=Set high priority on Port Base mode, or Enable VLAN tag / IP/DS support.
Port No\Mode
Port Base
VLAN Tag
IP / DS
Update
1. As long as any of three COS schemes(802.1Q VLAN Tag,IP TOS/DS or Port Base) is mapped to "high", the data packet will be treated as the high priority.
2. The Diffsev's queue 10, 18, 26, 34, 46, 48, 56 are high priority, Others is low priority.
3. When use VLAN tag priority, queue 0~3 are low priority, queue 4~7 are high priority.
Done
Internet
100%

- Click and choose **Port Base, VLAN Tag,** and/or **IP / DS** for Port No 1 ~ 17.
- Update: Click the **Update** button and apply the new settings of the **QoS Priority**.

LOAD DEFAULT

The **Load Default** parameters can be displayed by clicking the **Load Default** selection in the left sub-menu.

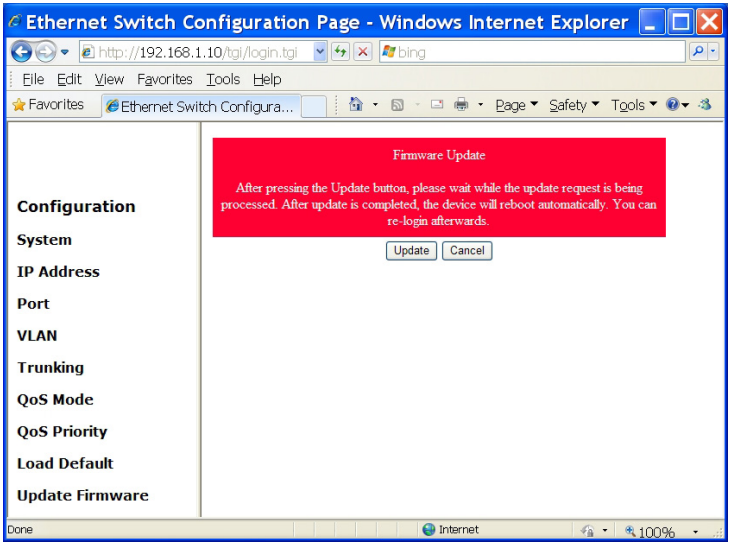


- Click the **Load** button to load the default settings.
- Click the **Reset** button to reset the switch.

  ⓘ Once the **Load** button is selected, all last saved **Port, VLAN, Trunking, QoS Mode** and **QoS Priority** settings will be reverted back to the default settings.

UPDATE FIRMWARE

The **Update Firmware** parameters can be displayed by clicking the **Update Firmware** selection in the left sub-menu.



- Click the **Update** button to update firmware to the switch.

Technical Specifications

	16-Port Web-Smart Ethernet Switch
Applicable Standards	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/FX
Fixed Ports	Sixteen ports for the 16-Port Switch
Optional 1-port Module Type	100Base-FX multi-mode/single-mode module or 100Base-BX WDM single-mode module
Speed	100Base-TX/FX/BX: 200Mbps for full-duplex; 100Mbps for half-duplex 10Base-T: 20Mbps for full-duplex; 10Mbps for half-duplex
Switching Method	Store-and-Forward
Performance	148,810pps forwarding rate per port for 100Mbps 14,880pps forwarding rate per port for 10Mbps
Chassis LED Indicators	Power TX port: Link/ACT; Speed (2 LEDs) FX port: Link/ACT (1 LED)

Physical Specifications

	16-Port Web-Smart Ethernet Switch
Dimensions	440mm (W) × 206mm (D) × 44mm (H) (17.32” (W) x 8.11” (D) x 1.73” H)) 19” rack mount size, 1U high
Weight	2.8Kg (6.16lbs.)
Power Input	100 ~ 240VAC, 50 ~ 60Hz
Power Dissipation	12W Max.
Operating Temperature	0℃ ~ 45℃ (32℉ ~ 113℉)
Storage Temperature	-10℃ ~ 70℃ (14℉ ~ 158℉)
Humidity	5 ~ 95%, non-condensing
Emissions	FCC Part 15 Class A, CE Mark Class A

Connector Pinouts

Pin arrangement of RJ-45 connectors:

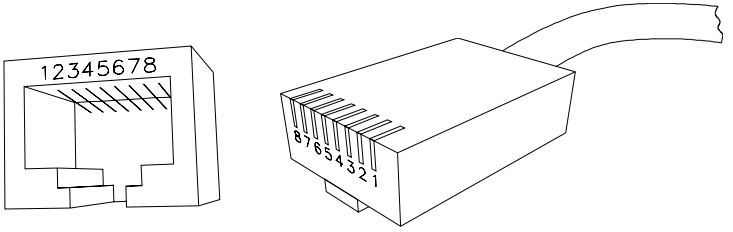


Figure 5: RJ-45 Connector and Cable Pins

The following table lists the pinout of 10/100Base-TX ports.

Connector Pin-Out

Pin	Regular Ports	Uplink port
1	Output Transmit Data +	Input Receive Data +
2	Output Transmit Data -	Input Receive Data -
3	Input Receive Data +	Output Transmit Data +
4	NC	NC
5	NC	NC
6	Input Receive Data -	Output Transmit Data -
7	NC	NC
8	NC	NC

Ordering Information

16 Fixed Ports		**Single-Port Module**			
Cable Connector	Distance	Speed	Cable (/125µm) Connector	Distance	✓
100Base-TX: Cat. 5 or better UTP/STP RJ-45 **OR** **10Base-T:** Cat. 3, 4, 5 or better UTP/STP RJ-45	100m	100Base-FX	MMF (50µm or 62.5µm) SC	2km	
		100Base-FX	MMF (50µm or 62.5µm) ST	2km	
		100Base-FX	MMF (50µm or 62.5µm) MT-RJ	2km	
		100Base-FX	MMF (50µm or 62.5µm) VF-45	2km	
		100Base-FX	MMF (50µm or 62.5µm) LC	2km	
		100Base-FX	SMF (9µm or 10µm) ST, SC	Up to 100km	
		100Base-BX	WDM SMF (9µm or 10µm) SC	Up to 40km	

i. The maximum node-to-node network distance is in full-duplex operation.
ii. MMF denotes Multi-Mode Fiber. SMF denotes Single-Mode Fiber.

FCC Statement

The FCC (Federal Communications Commission) restricts the amount of radio frequency emission and radiation coming from computer equipment.

The equipment introduced in this manual has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user is required to correct the interference at his/her own expense.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

Trademarks

Product names mentioned in this manual may be trademarks or registered trademarks of those products.

All trademarks or brand names mentioned are properties of their respective companies.

Preface

This manual describes how to install and use the 24-Port Web-Smart Ethernet Switch. The TX ports of the switch introduced here auto-negotiates the presence of 10/100Mbps and full/half-duplex mode and auto-MDIX. In addition, it allows an optional 100Base-FX multi-mode or single-mode fiber module, enabling long distance connection.

To get the most out of this manual, you should have an understanding of networking concepts such as bridging, IEEE 802.3 10Base-T Ethernet, IEEE 802.3u 100Base-TX/FX Fast Ethernet, and local area networks (LANs).

For more information about these topics, please refer to the Appendices.

In this manual, you will find:

- Introduction on the Switch
- Product features
- Illustrative LEDs functions
- Installation instructions
- Specifications

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Product Overview

Front View

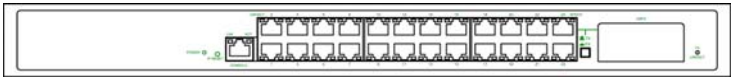


Figure 1: 24-Port Web-Smart Ethernet Switch

Package Contents

When you unpack the product package, you shall find these items listed below.

- ✓ *The 24-Port Switch*
- ✓ *One AC power cord*
- ✓ *User's Manual*

Please inspect the contents, and report any apparent damage or missing items immediately to your authorized reseller.

Product Features

- PROVIDES 24 × 10/100MBPS PORTS USING RJ-45 CONNECTORS
- AN OPTIONAL SINGLE-PORT FIBER MODULE ALLOWS:
  - *100BASE-FX MULTI-MODE FIBER WITH SC, ST, MT-RJ, VF-45 OR LC CONNECTOR*
  - *100BASE-FX SINGLE-MODE FIBER WITH SC CONNECTOR*
- AUTO-NEGOTIATION FOR SPEED AND DUPLEX MODE ON TX PORTS
- 8192 MAC ADDRESSES, 1.5M BITS BUFFER MEMORY
- AUTO-MDIX FOR ALL TX PORTS
- STORE-AND-FORWARD MECHANISM
- TRUE NON-BLOCKING ARCHITECTURE
- FULL WIRE SPEED FORWARDING RATE
- BROADCAST STORM FILTERING CONTROL
- BACK-PRESSURE AND IEEE 802.3X COMPLIANT FLOW CONTROL
- SYSTEM, IP CONFIGURATION, PORT, PORT-BASED VLAN, AND PORT-BASED TRUNKING SETTING THROUGH THE WEB-BASED CONSOLE PORT.
- FRONT PANEL PUSH BUTTON TO CHOOSE 100BASE-FX OR PORT 24
- PRESS THE FRONT PANEL IP RESET PUSH BUTTON FOR FIVE SECONDS TO RESET THE ETHERNET SWITCH BACK TO THE DEFAULT IP ADDRESS. (THE PORT, VLAN, AND TRUNKING SETTINGS WILL REMAIN THE SAME AS WHEN THEY WERE LAST SAVED).
- FRONT PANEL PORT AND POWER STATUS LEDS
- STANDARD 19" RACKMOUNT SIZE, ONE-UNIT IN HEIGHT

Front Panel Display

The LED indicators on the front panel provide you with instant feedback on each port status, and help you monitor and troubleshoot the switch.

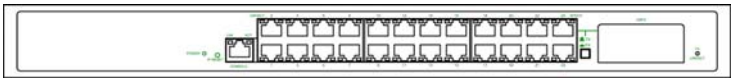


Figure 2: Front Panel LEDs

Power
This LED comes on when the switch is properly connected to power and turned on.

Push Button
The push button is located at the right side of port 24 on the 24-Port Switch.

Depress this button to use twisted pair port 24, and press this button to use the 100Base-FX module.

IP RESET Push Button
Press the Front panel IP RESET push button around five seconds to reset the Ethernet Switch back with the default IP Address.

Port Status
The RJ-45 ports are numbered from 1 to 24 on the 24-Port Switch.

The LEDs are located on the ports of the switch, displaying status for each respective port. Please refer to the table below for more information.

Consult the following table for details.

ⓘ Before you use this table for troubleshooting, make sure the switch is properly connected to power and turned on.

Physical Ports

The 24-Port Switch has twenty-four 10/100Mbps ports using RJ-45 connectors and provides one slot for the optional single-port fiber module. The optional module allows fiber type (multi-mode or single-mode fiber) and connector (SC, ST, MT-RJ, VF-45, or LC) at user's discretion.

UNDERSTANDING FRONT PANEL DESIGN

Power LED		On	Power feeding in
		Off	Power switched off
			Improper connection
Console Port LED	LNK	On	A valid network connection LNK stands for LINK
		Off	No connection
	ACT	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
		Off	Neither transmitting nor receiving data
Port LED	LNK/ACT	On	A valid network connection LNK stands for LINK
		Flashing	Transmitting or receiving data ACT stands for ACTIVITY
		Off	Neither connection nor activity
	SPEED	On	A valid 100Mbps connection
		Off	A valid 10Mbps connection
100FX Port LED	LNK	On	A valid network connection LNK stands for LINK
		Off	No connection
	ACT	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
		Off	Neither transmitting nor receiving data

Installation

Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

- The ambient temperature should be between 0 to 45 degrees Celsius.
- The relative humidity should be less than 95 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.
- Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes on each side of the switch or on the rear of the equipment.
- The power outlet should be within 6 feet (1.8 meters) of the switch.

Installation and Placement Instructions

MOUNTED TO 19-INCH STANDARD RACK

Locate the accessories supplied in the product package. Use the rackmount brackets and screws to install the switch into any EIA 19" standard rack.

Step 1: Attach the brackets to each side of the chassis.

Step 2: Apply the screws to each side and secure them tightly.

Step 3: Carefully position the switch into the rack.

Step 4: Align the brackets to the side holes on the rack and use rack screws to secure the chassis with the rack.

Step 5: Proceed to the "Connecting to Power" section.

DESKTOP OR ANY FLAT SURFACE

The switch can sit on desktop or any flat surface with adequate space and ventilation. If you want to place it onto a shelf, make sure the shelf can withstand the weight of the switch.

Step 1: Simply put the switch on the desired place.

Step 2: Ensure the switch receives good ventilation.

Step 3: Proceed to the "Connecting to Power" section.

Optional Fiber Module Installation

Consult the following illustrations before installation.

Step 1: Make sure the power is switched off. The module is not hot-swappable.

ⓘ It may cause electric shock or any possible damage to the switch if the power is not switched off.

Step 2: Remove the module from the static-free container.

Step 3: Unscrew the cover plate of the expansion slot.
(The slot for single-port module is located at the right side of the switch.)

Step 4: Remove the plate.
(Keep it for future use if you decide to remove this module later.)

Step 5: Carefully slide the module into the slot, following the internal plastic guide rails.

Step 6: Once it is fully slid in, snap in the module to make a proper connection.

Step 7: Fasten the module screws.

Step 8: Finally, turn on the power.

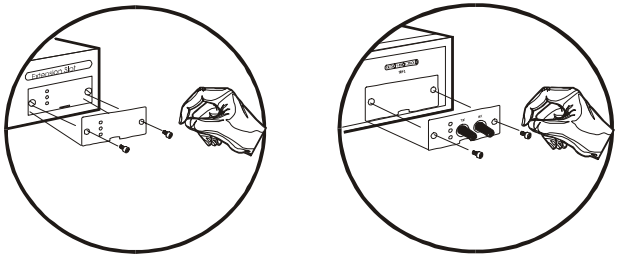


Figure 3: Removal of cover plate Fiber module being installed

Connecting to Power

Locate the supplied AC power cord.

Step 1: Connect the AC power cord to the receptacle at the back of the switch.

Step 2: Attach the plug into a standard AC outlet with a voltage range from 100~240VAC.

Step 3: The power LED on the front panel will then illuminate.

Figure 4: Rear view of the switch

Connecting to Your Network

CABLING

Step 1: First, ensure the power of the switch (and end devices) is turned off.

ⓘ It may cause an electric shock or any possible harm to you if the power is not switched off.

Step 2: Prepare cable with corresponding connectors for each type of port in use.
(Consult the table below for cabling requirements based on connectors and speed considerations.)

Step 3: Connect one end of the cable to the switch and the other end to a desired device.

Step 4: Once the connections between two end devices are made successfully, turn on the power and the switch is operational.

NETWORK SEGMENTATION

The maximum segment distance between a node and a directly connected switch port on a 100Base-FX network is 100km using 10/125 (or 9/125) µm single-mode fiber optic cable. It is capable of a maximum span of 2km when 62.5/125 (or 50/125) µm multi-mode fiber optic cable is used.

Cable Specifications Table

Ethernet Standards	**Connector**	**Port Speed Half/Full Duplex**	**Cable**	**Max. Distance**
10Base-T	RJ-45	10/20 Mbps	Cat. 3, 4 or 5 UTP/STP	100m
100Base-TX	RJ-45	100/200 Mbps	Cat. 5 UTP/STP	100m
100Base-FX Multi-mode	ST, SC, MT-RJ, VF-45, LC	100/200 Mbps	50 or 62.5/125 µm multi-mode fiber	Up to 2km
100Base-FX Single-mode	ST, SC	100/200 Mbps	9 or 10/125 µm single-mode fiber	Up to 100km
100Base-FX WDM Single-mode	SC	100/200 Mbps	9 or 10/125 µm single-mode fiber	Up to 40km

Switch Configuration

Setting up Console Port Connection (Web-Based Browser Interface)

The Ethernet Switch provides a browser interface that lets you configure and manage the Ethernet Switch from a Web browser (such as Microsoft Internet Explorer or Netscape Navigator) remotely.
By connecting to the Ethernet Switch's console port, you can access the Ethernet Switch's web interface applications directly in your web browser by entering the default IP address of the Ethernet Switch (192.168.1.10). You can then use your web browser to list and manage the Ethernet Switch configuration parameters from one central location.

Logging on to The Ethernet Switch

SWITCH IP ADDRESS

In your web browser, specify the **default IP address** of the Ethernet Switch **(192.168.1.10)**.

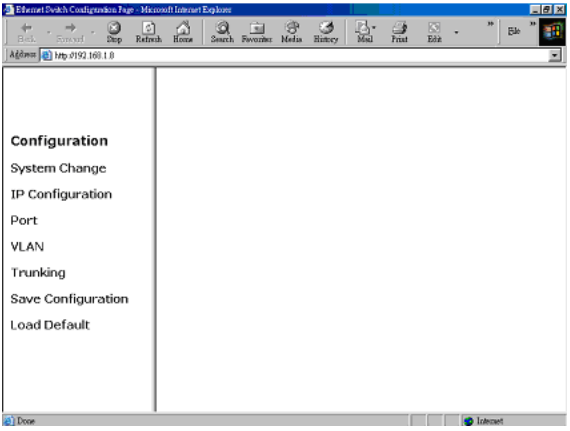
USER NAME

Enter the factory default user name: **admin**.

PASSWORD

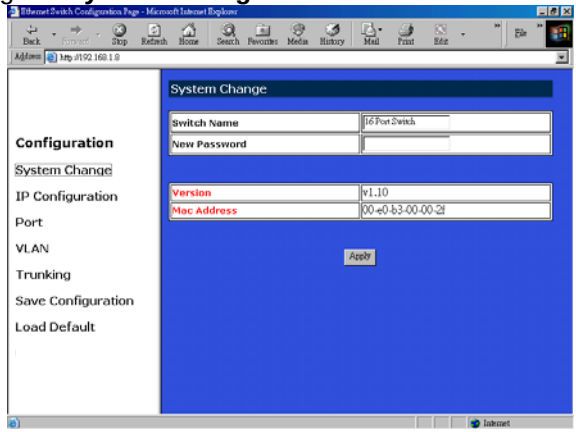
Enter the factory default password (no password, **press Enter directly**).
Otherwise, enter a user-defined password if you followed the instructions later and changed the factory default password.

Main Menu



SYSTEM CHANGE

The **System Change** parameters can be displayed by clicking the **System Change** button in the left sub-menu.



- Switch Name: Type a switch name and replace the current switch name with a new one. **(Please restart your Computer once the Switch Name is replaced**

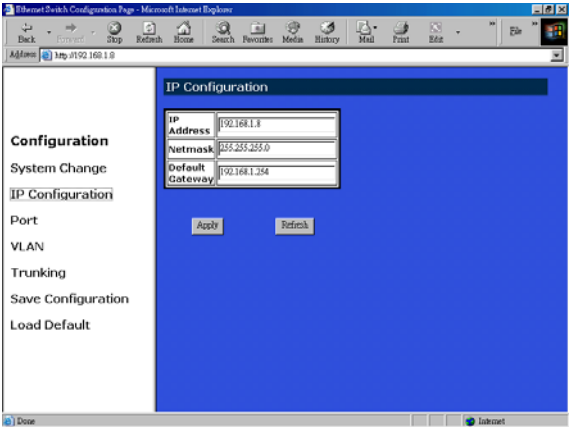
and saved under " Save Configuration " by the new name).

<Note> (Only " a-z ", "A-Z", "0-9", "under line" & "Space" can be acceptable, totally can not exceed 16 characters).

- Password: Enter a user-defined password and change the factory default password.

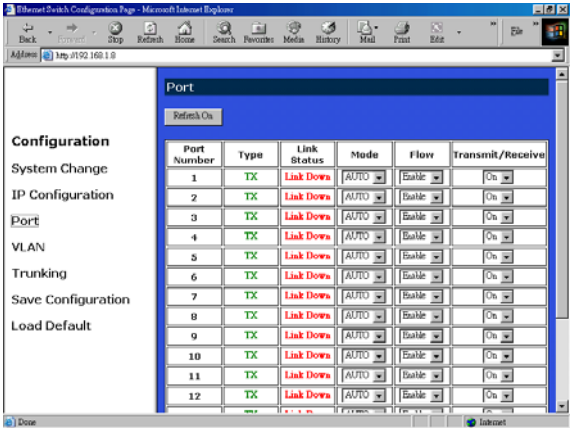
  <Note> (Only " a-z ", "A-Z", "0-9", "under line" & "Space" can be acceptable, totally can not exceed 16 characters).
- Apply: Click the **Apply** button and apply the new System settings.

IP CONFIGURATION



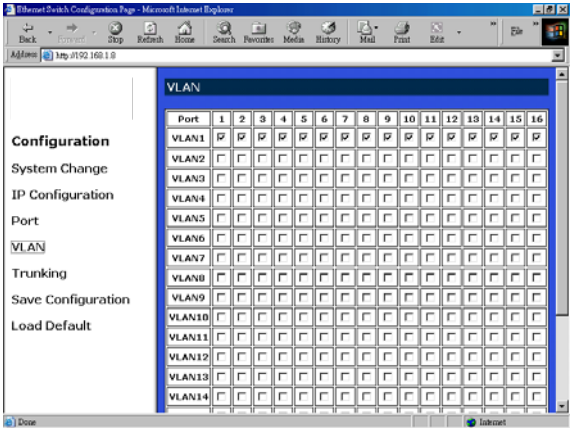
- Refresh: Click the **Refresh** button and refresh back to the last saved IP Configurations.
- IP Address, Netmask, Default Gateway: You can see and change the IP Address, Netmask, and Default Gateway of the Ethernet Switch.
- Apply: Click the **Apply** button and apply the new IP Configurations.

PORT


Ethernet Switch Configuration Page - Microsoft Internet Explorer
Configuration
System Change
IP Configuration
Port
VLAN
Trunking
Save Configuration
Load Default
Port
Refresh On
Port Number
Type
Link Status
Mode
Flow
Transmit/Receive
1 TX Link Down AUTO Enable On
2 TX Link Down AUTO Enable On
3 TX Link Down AUTO Enable On
4 TX Link Down AUTO Enable On
5 TX Link Down AUTO Enable On
6 TX Link Down AUTO Enable On
7 TX Link Down AUTO Enable On
8 TX Link Down AUTO Enable On
9 TX Link Down AUTO Enable On
10 TX Link Down AUTO Enable On
11 TX Link Down AUTO Enable On
12 TX Link Down AUTO Enable On

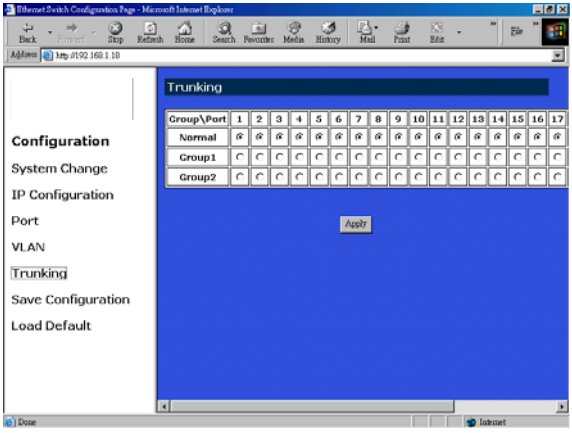
- Refresh: Click the **Refresh On** or **Refresh Off** button to or not to refresh back to the last saved settings of the ports.
  <Note> It is recommended to change the **Refresh On** button to **Refresh Off** while you change the settings of the ports. The **Refresh On** will refresh the settings of the ports shown on the screen around every ten seconds.
- Mode: Choose **AUTO, 10HD, 10FD, 100HD** or **100FD** for the ports.
- Flow Control: Choose **Enable** or **Disable** to enable or disable the flow control of the ports.
- Transmit / Receive: Choose **On** or **Off** to turn on or off transmit / receive of the ports.
- Apply: Click the **Apply** button and apply the new settings of the ports.

VLAN



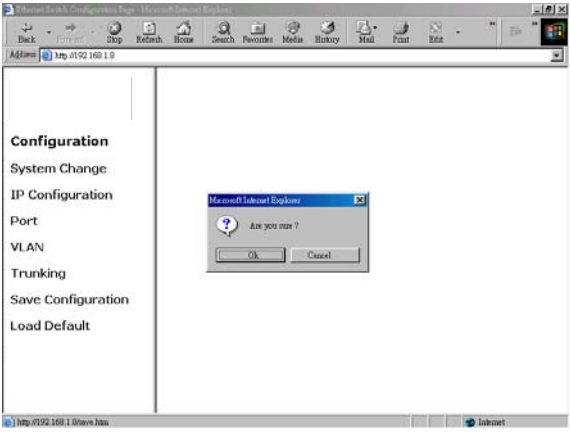
- VLAN: Click and choose the ports to be added into the VLAN groups.
- Apply: Click the **Apply** button and apply the new settings of the VLAN groups.
  <Note> All Ports have to be selected to one of the VLAN Groups, those Port/Ports were not selected will be notified by the alarm message which shows " Non-Identify VLAN Group On Port ".

TRUNKING



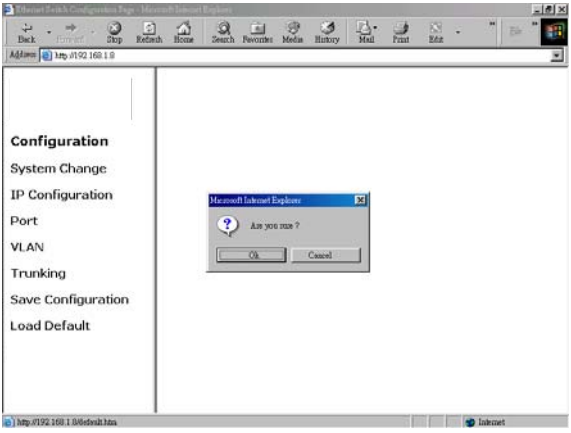
- Trunking Group 1: Click and choose any four ports to be added into the Trunking Group 1.
- Trunking Group 2: Click and choose any four ports to be added into the Trunking Group 2.
- Apply: Click the **Apply** button and apply the new settings of the Trunking Groups.
  <Note> Each Trunking Group can not be selected more than four ports, the alarm message will show " Maximum Four Ports For Group 1, or 2, " if it's exceeded.

SAVE CONFIGURATION



- Click **Save Configuration**.
- Click the **Ok** or **Cancel** button to or not to save the configurations.
  <Note> The **Cancel** button will discard any data you have changed since the last "Save" operation. Without clicking **Ok** button, the switch does not save any changes you may have made.

LOAD DEFAULT



- Click **Load Default**.
- Click the **Ok** or **Cancel** button to or not to load the default settings.
  < Note > Once the **Ok** button is selected, all last saved **Port**, **VLAN**, and **Trunking** setting will revert back to the default settings.

Technical Specifications

	24-Port Web-Smart Ethernet Switch
Applicable Standards	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/FX
Fixed Ports	Twenty-four ports for the 24-Port Switch
Optional 1-port Module Type	100Base-FX multi-mode or single-mode module
Speed	100Base-TX/FX: 200Mbps for full-duplex; 100Mbps for half-duplex 10Base-T: 20Mbps for full-duplex; 10Mbps for half-duplex
Switching Method	Store-and-Forward
Performance	148,810pps forwarding rate per port for 100Mbps 14,880pps forwarding rate per port for 10Mbps
Chassis LED Indicators	Power LED For Console Port: LNK; ACT (2 LEDs) For ports: LNK/ACT; SPEED (2 LEDs)

Physical Specifications

	24-Port Web-Smart Ethernet Switch
Dimensions	440mm (W) × 207mm (D) × 44mm (H) (17.32" (W) x 8.15" (D) x 1.73" H)) 19" rack mount size, 1U high
Weight	2.8Kg (6.16lbs.)
Power Input	100 ~ 240VAC, 50 ~ 60Hz
Power	11.74W Max.
Operating Temperature	0℃ ~ 45℃ (32℉ ~ 113℉)
Storage Temperature	-10℃ ~ 70℃ (14℉ ~ 158℉)
Humidity	5 ~ 95%, non-condensing
Emissions	FCC Part 15 Class A, CE Mark Class A

Connector Pinouts

Pin arrangement of RJ-45 connectors:

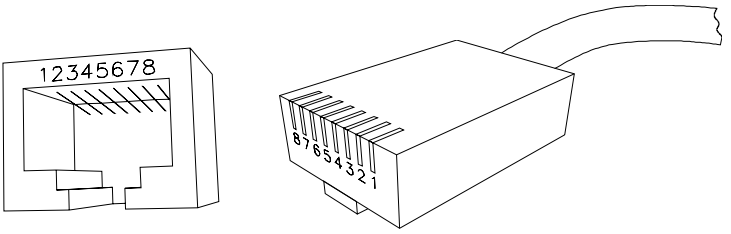


Figure 5: RJ-45 Connector and Cable Pins

The following table lists the pinout of 10/100Base-TX ports.

Connector Pin-Out

Pin	Regular Ports	Uplink port
1	Output Transmit Data +	Input Receive Data +
2	Output Transmit Data -	Input Receive Data -
3	Input Receive Data +	Output Transmit Data +
4	NC	NC
5	NC	NC
6	Input Receive Data -	Output Transmit Data -
7	NC	NC
8	NC	NC

Ordering Information

24 Fixed Ports		**Single-Port Module**			
Cable Connector	Distance	Speed	Cable (/125µm) Connector	Distance	✓
100Base-TX: Cat. 5 or better UTP/STP RJ-45 **OR** **10Base-T:** Cat. 3, 4, 5 or better UTP/STP RJ-45	100m	100Base-FX	MMF (50µm or 62.5µm) SC	2km	
		100Base-FX	MMF (50µm or 62.5µm) ST	2km	
		100Base-FX	MMF (50µm or 62.5µm) MT-RJ	2km	
		100Base-FX	MMF (50µm or 62.5µm) VF-45	2km	
		100Base-FX	MMF (50µm or 62.5µm) LC	2km	
		100Base-FX	SMF (9µm or 10µm) ST, SC	Up to 100km	
		100Base-FX	WDM SMF (9µm or 10µm) SC	Up to 40km	

i. The maximum node-to-node network distance is in full-duplex operation.
ii. MMF denotes Multi-Mode Fiber. SMF denotes Single-Mode Fiber.